

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: FAIL-SAFE

Report Number: P547507

Luminaire Tested: **FMR-24-4-LD4-4STD-40-UNV-93-88-EDD**

Issue Date: 6/15/2021

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.



**Test Information**

Test Method: LM-79-08  
Report Number: P547507  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 6/15/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: FMR-24-4-LD4-4STD-40-UNV-93-88-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

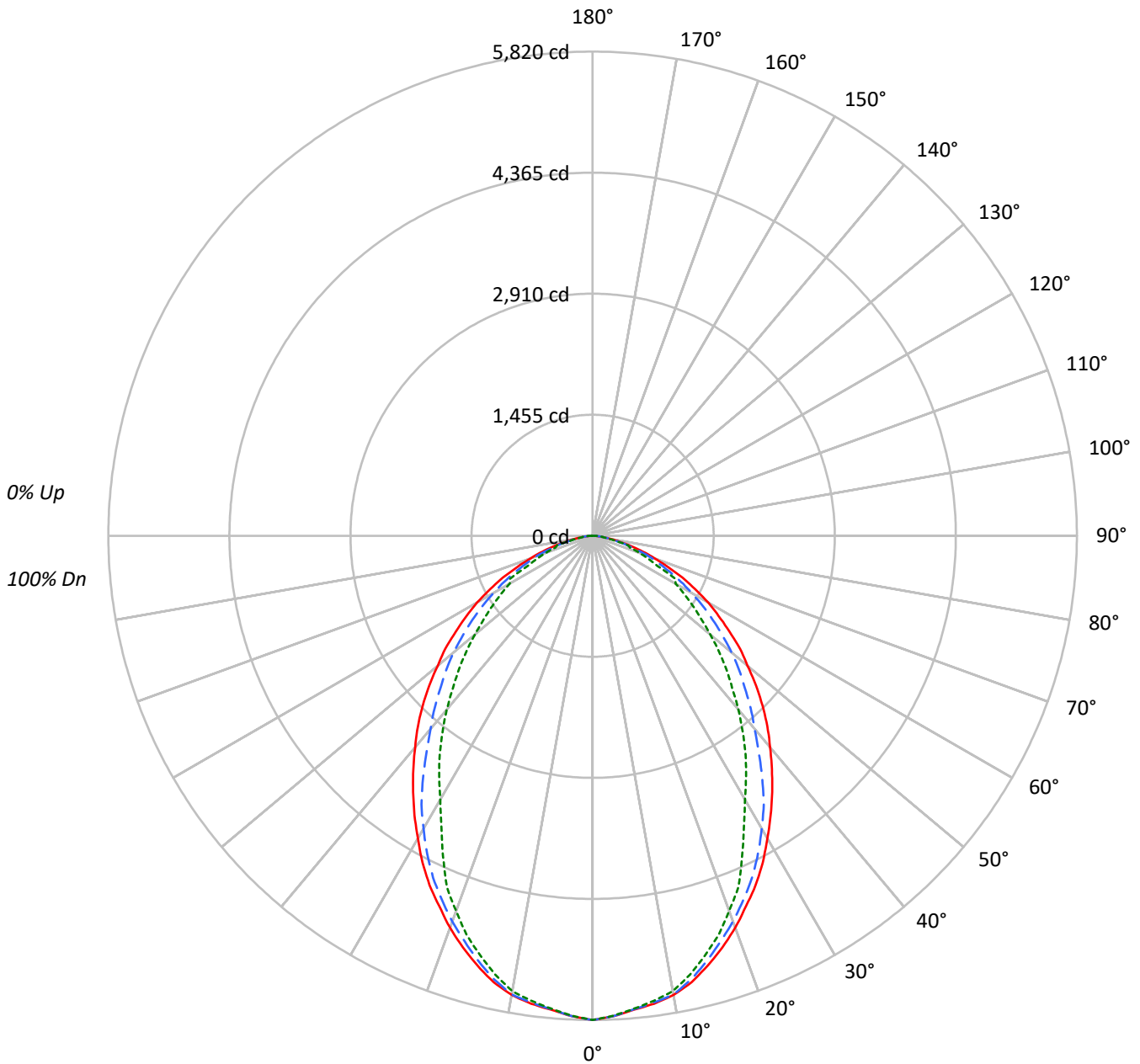
Lumens per Lamp: N/A  
Luminaire Lumens: 11426.0 lumens  
Efficiency: N/A  
Efficacy: 85.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 133.2  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT

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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20									20									20									20									
RC	80									50									30									10									0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0																
RCR																																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100																			
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87																			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75																			
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65																			
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56																			
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50																			
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44																			
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40																			
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36																			
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33																			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30																			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	7831	7831	7831
5°	7725	7716	7707
10°	7658	7649	7593
15°	7451	7376	7273
20°	7178	7062	6869
25°	6883	6733	6313
30°	6523	6314	5687
35°	6178	5835	5261
40°	5826	5318	4786
45°	5493	4916	4328
50°	5084	4563	3859
55°	4704	4135	3457
60°	4309	3694	3096
65°	3792	3235	2742
70°	3124	2832	2329
75°	2483	2169	2274
80°	1668	1564	1460
85°	1039	1246	1454



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	541.8	4.7
10°-20°	1486.9	13.0
20°-30°	2058.5	18.0
30°-40°	2195.0	19.2
40°-50°	2002.4	17.5
50°-60°	1568.8	13.7
60°-70°	1022.4	8.9
70°-80°	453.0	4.0
80°-90°	97.2	0.9
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	4087.2	35.8
0°-40°	6282.1	55.0
0°-60°	9853.3	86.2
0°-90°	11426.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	11426.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5820	5820	5820	5820	5820	
5°	5719	5713	5713	5706	5706	543
15°	5349	5349	5295	5242	5221	1504
25°	4636	4609	4535	4374	4252	2128
35°	3761	3734	3553	3284	3203	2351
45°	2887	2826	2584	2368	2274	2223
55°	2005	1945	1763	1554	1474	1798
65°	1191	1124	1016	1036	861	1174
75°	478	444	417	397	437	512
85°	67	74	81	88	94	93
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5820.3	5820.3	5820.3	5820.3	5820.3
2.5°	5779.9	5779.9	5779.9	5773.2	5773.2
5°	5719.3	5712.6	5712.6	5705.9	5705.9
7.5°	5672.2	5665.5	5658.8	5652.0	5638.6
10°	5604.9	5604.9	5598.2	5564.6	5557.8
12.5°	5497.3	5490.5	5463.6	5416.5	5403.1
15°	5349.2	5349.2	5295.4	5241.6	5221.4
17.5°	5187.8	5181.0	5113.7	5059.9	5033.0
20°	5012.8	4999.4	4932.1	4844.6	4797.5
22.5°	4817.7	4817.7	4736.9	4622.6	4575.5
25°	4636.0	4609.1	4535.1	4373.6	4252.5
27.5°	4427.4	4387.1	4306.3	4077.5	3936.2
30°	4198.7	4178.5	4064.1	3768.0	3660.4
32.5°	3983.3	3949.7	3828.6	3519.1	3431.6
35°	3761.3	3734.4	3552.7	3283.6	3202.8
37.5°	3539.3	3505.6	3276.8	3061.5	2960.6
40°	3317.2	3276.8	3027.9	2832.7	2725.1
42.5°	3108.6	3054.8	2812.6	2604.0	2482.9
45°	2886.6	2826.0	2583.8	2368.5	2274.3
47.5°	2664.5	2610.7	2388.7	2166.6	2059.0
50°	2429.0	2381.9	2180.1	1958.0	1843.6
52.5°	2233.9	2159.9	1964.8	1742.7	1648.5
55°	2005.1	1944.6	1762.9	1554.3	1473.6
57.5°	1796.5	1736.0	1567.8	1372.6	1305.4
60°	1601.4	1513.9	1372.6	1204.4	1150.6
62.5°	1386.1	1318.8	1197.7	1056.4	1123.7
65°	1191.0	1123.7	1016.0	1036.2	861.3
67.5°	975.6	942.0	847.8	753.6	726.7
70°	794.0	753.6	720.0	619.0	592.1
72.5°	632.5	592.1	545.0	491.2	471.0
75°	477.7	444.1	417.2	397.0	437.4
77.5°	329.7	316.2	296.1	275.9	269.1
80°	215.3	208.6	201.9	195.1	188.4
82.5°	127.8	127.8	127.8	127.8	127.8
85°	67.3	74.0	80.7	87.5	94.2
87.5°	40.4	40.4	47.1	53.8	60.6
90°	0.0	0.0	0.0	0.0	0.0



Report Generated By 670246072 / DESKTOP-MV3F9LC







— 0°-180°    - - 45°-225°    - - - - 90°-270°







(END OF REPORT)